National Science Foundation
MAJOR RESEARCH INSTRUMENTATION (MRI)

QEM Network Workshop
Hilton Baltimore BWI, MD
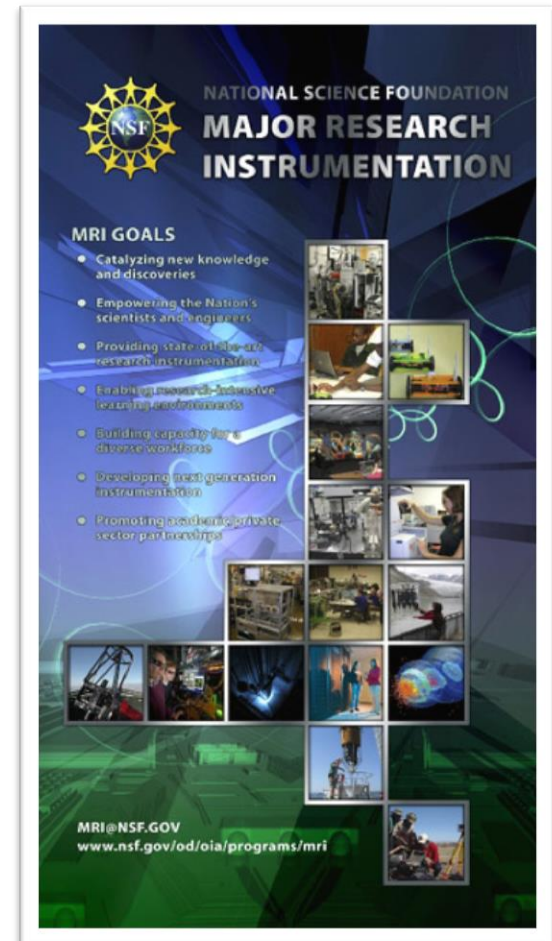
November 7, 2014

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http://www.nsf.gov/od/iia/programs/mri

OFFICE OF INTERNATIONAL AND INTEGRATIVE ACTIVITIES

NSF Overview

Physically located in Arlington, VA
Virtually located at http://www.nsf.gov/

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NSF Overview

- **An independent Federal agency**

- **Created by Congress in 1950 with a mission** *"to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes"*

- **Annual budget of about $7.2 billion (FY 2014)**

- **Funding source for ~24% of all Federally supported basic research in America's colleges & universities.**

http://nsf.gov/about/

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NSF Overview

- **Fulfills mission chiefly by issuing limited-term (3-5 year) grants, mostly to individual PIs**

- **Primarily community driven – "bottom up"**

- **Currently funds about 11,000 new awards per year, out of ~42,000 submitted**

- **Fund research proposals deemed most promising by a merit-review system**

- **Merit-review largely by panels and ad hoc reviews**

NSF Funding Opportunities

- **Program Description**
  Published only on the NSF website.
  Proposals must follow GPG (Grant Proposal Guide) instructions.

- **Program Announcement**
  Published NSF document describing the program.
  Proposals must follow GPG instructions.

- **Program Solicitation**
  Published* document with additional restrictions and/or requirements.
  Proposals must follow <u>both</u> the solicitation and the GPG instructions

- **Dear Colleague Letter**
  Notifications of opportunities or special competitions for supplements to existing NSF awards.

*Solicitations are also published at http://www.grants.gov

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Major Research Instrumentation Strategic Goals

Supports the *acquisition* or *development* of *major research instrumentation* that is, in general, too costly or not appropriate for support through other NSF programs. The instrument is expected to be operational for regular research use by the end of the award period.

- Supports the *acquisition* of a shared, major, state-of-the-art instrument, thereby improving access to, and increased use of, a modern research instrument by scientists, engineers and students;

OR

- Supports the *development* of the next generation of major instrumentation, resulting in a new type of instrument that is more widely used, and/or opens up new areas of research and research training;

AND

- Enables academic departments, disciplinary & cross-disciplinary units, and multi-organization collaborations to integrate research with *research training*.

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The MRI Program Will *Not* Support:

- Construction, renovation or modernization of rooms, buildings or research facilities (instruments must be able to decouple from their host environment);

- Large, specialized experimental facilities (constructed with significant amounts of common building material using standard building techniques);

- General purpose and supporting equipment (e.g., general purpose computers/laboratory equipment, fume hoods, cryogen storage systems);

- Sustaining infrastructure and/or building systems (e.g., electrical, plumbing, HVAC, toxic waste disposal, telecommunications);

- General purpose platforms or environments (e.g., fixed, non-fixed structures, manned vehicles);

- Instrumentation used primarily for science and engineering education courses or for medical/clinical/pharmaceutical research.

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MRI-Eligible Expenses

MRI does not support requests for multiple instruments to outfit labs/facilities

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MRI Proposals – The Basics

- **Restrictions on organization submission eligibility** - see solicitation **NSF 15-504**

- **Submission limit -** Three (3) per organization: *If three proposals are submitted, at least one of the proposals must be for instrument development.*

- **Cost-sharing** at the level of 30% of the ***total project cost*** is required for Ph.D.-granting institutions and non-degree-granting organizations. ***Cost-sharing is not required for non-Ph.D. granting institutions.***

- **Merit Review** - At the time of submission, PI's are asked to identify an NSF division(s) to review proposal. NSF reserves the right to place proposals in the appropriate division(s) for review.

Note: Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies &Procedures Guide* (PAPPG) (NSF 15-1). The PAPPG is consistent with, and, implements the new Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance) (2 CFR § 200). NSF anticipates release of the PAPPG in the Fall of 2014 and it will be effective for proposals submitted, or due, on or after December 26, 2014. Please be advised that proposers who opt to submit prior to December 26, 2014, must also follow the guidelines contained in NSF 15-1.

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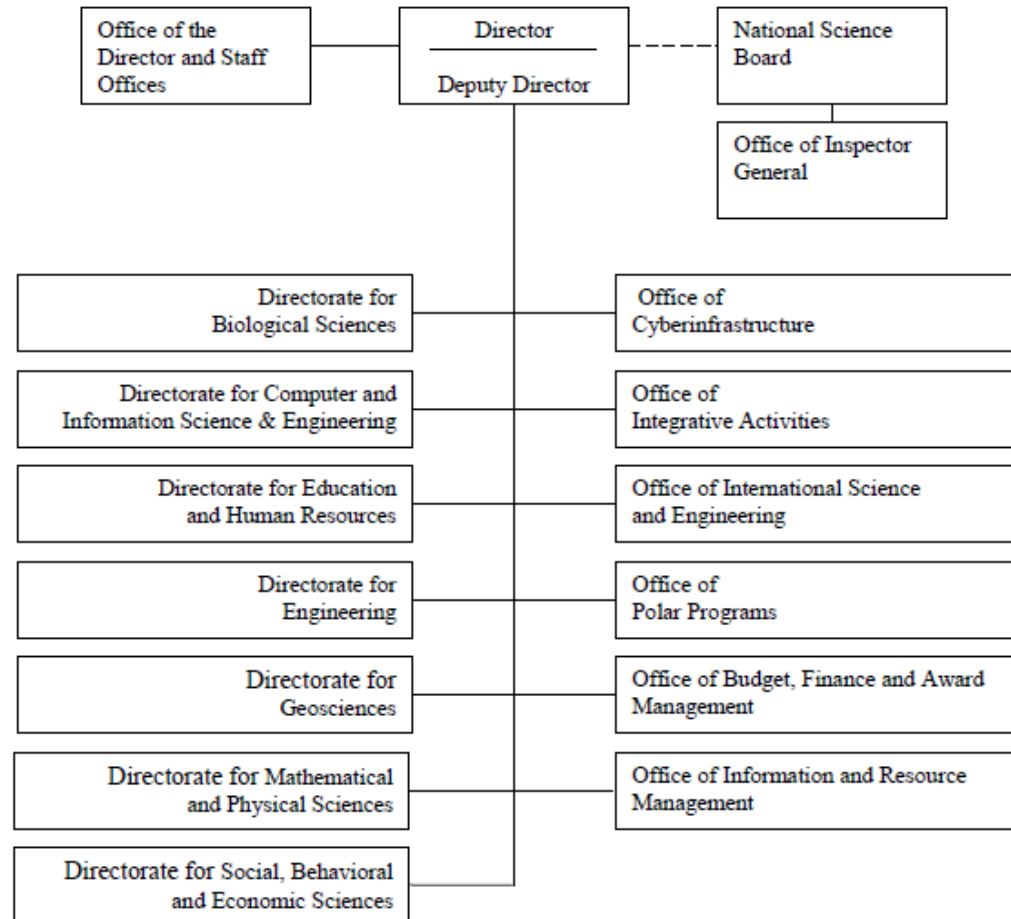
MRI: Classification of Organizations

- **Ph.D. granting institutions of higher education** are accredited colleges and universities that have awarded more than 20 Ph.D.s or D.Sci.s in all NSF-supported fields during the combined previous two academic years. Additionally, any organization that awards Ph.D. or D.Sci. in NSF-supported fields is considered to be a Ph.D.-granting institution if the only degrees it awards in NSF-supported fields are post-Bachelor's degrees.

- **Non-Ph.D. granting institutions of higher education** are accredited colleges and universities(including two-year community colleges) that award Associate's degrees, Bachelor's degrees, and/or Master's degrees in NSF-supported fields, but have awarded 20 or fewer Ph.D./D.Sci. degrees in all NSF-supported fields during the combined previous two academic years.

- **Non-degree granting organizations** are those that do not award Associate's degrees, Bachelor's degrees, Master's degrees, and/or Ph.D.s or D.Sci.s. Non-degree-granting organizations also include institutions of higher education that award all of their degrees outside of NSF-supported fields.

http://www.nsf.gov/od/oia/programs/mri/

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Finding a Home at NSF

Office of the Director and Staff Offices	Director / Deputy Director	National Science Board
		Office of Inspector General

Directorate for Biological Sciences	Office of Cyberinfrastructure
Directorate for Computer and Information Science & Engineering	Office of Integrative Activities
Directorate for Education and Human Resources	Office of International Science and Engineering
Directorate for Engineering	Office of Polar Programs
Directorate for Geosciences	Office of Budget, Finance and Award Management
Directorate for Mathematical and Physical Sciences	Office of Information and Resource Management
Directorate for Social, Behavioral and Economic Sciences	

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INTERMISSION

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National Science Foundation

What Makes an MRI Proposal Fail, What Makes an MRI Proposal Competitive?

QEM Network Workshop
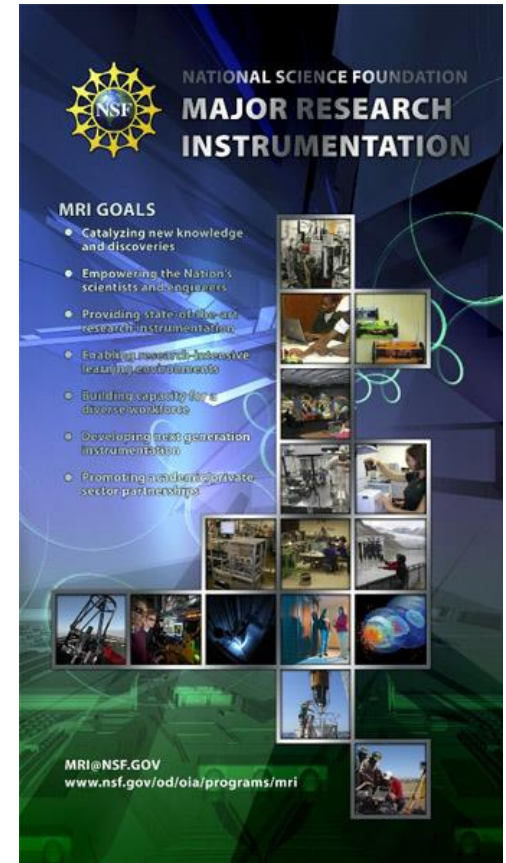**Hilton Baltimore BWI, MD**

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MRI Revisions in FY 2015

- Language has been added to emphasize that proposals that fail to include in the budget justification a cost table in the format prescribed in the the solicitation will be returned without review or declined.
- The description of eligible costs that may be included in the Total Project Cost has been clarified.
- The description of who should submit biographical sketches has been clarified.
- Budget guidance for acquisition proposals (Track 1) has been modified. At least 70% of the Total Project Cost must fall under the Equipment category. For acquisition proposals from institutions required to include cost sharing, grant funds may only be requested for the Equipment budget category.
- Subawards may be included in development proposals but not in acquisition proposals unless the submitting organization is a non-Ph.D.granting institution of higher education.

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Understand NSF Before Considering a Proposal!

- **Know the NSF Website (www.nsf.gov)**
- **Search Recent Awards (www.nsf.gov/awardsearch)**
- **Identify appropriate funding opportunities (www.nsf.gov/funding)**
- **Talk to Program Officers in Divisions where you fit**
- **Know the "Proposal and Award Policies and Procedures Guide" (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=papp)**
- **Know program purpose, goals, and requirements**
- **Serve as a panelist!**
- **Talk to successful PIs**
- **Know NSF's role compared to other Federal agencies**

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MRI Proposals

What makes an MRI proposal fail <u>before</u> it is reviewed?

- ***Proposals that do not include a properly formatted budget table in the budget justification;***
- Proposals describing activities that fall outside of the scope of those supported by the MRI program;
- Proposals describing activities that fall outside of the scope of those supported by NSF;
- Proposals that do not adequately distinguish development efforts from acquisition or basic research efforts;
- Proposals that exceed an organization's submission limit;
- Proposals that represent standard research projects appropriate for submission to regular NSF programs;
- Proposals to place an instrument at a facility of another Federal agency or one of their FFRDCs that are not submitted by consortia (rare);
- Proposals that augment the scope of facilities receiving funding through the NSF Major Research Equipment and Facilities Construction (MREFC) account (rare);

Proposals with the above issues are subject to _Return Without Review!_

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MRI Proposals

What makes an MRI proposal fail <u>before</u> it is reviewed?

- Proposals that do not indicate appropriate levels of cost-sharing;
- Proposals that do not contain required documentation demonstrating organizational commitment and information on MRI awards to the organization in the past five years or that do not contain Results from Prior MRI Support in the Project Description;
- Proposals that do not contain required supplemental documentation (**e.g Data Management Plan** and, if applicable, a **Post-Doc Mentoring Plan**)
- Proposals that contain supplemental documentation not required and/or encouraged by the MRI program;
- Proposals that do not conform to font, margin & page limitations;
- Proposals that do not separately address the Intellectual Merit and Broader Impacts in the Project Summary and Project Description;
- Proposals that do not contain a Management Plan in the Project Description.

There is a checklist in the solicitation – use it!

Proposals with the above issues are subject to *Return Without Review!*

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MRI Proposals

• *A management plan is required and should describe allocation of time to users, anticipated downtime, operations and maintenance, etc.*

• *All NSF proposals now must include (or not?) a data management plan describing how NSF-funded research will be made available at incremental cost in a reasonable time.*

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MRI Proposals

What makes an MRI proposal fail <u>during</u> the review?

• Proposals that do not demonstrate adequate institutional commitment;
• Proposals that do not adequately demonstrate how and by whom the instrument will be utilized, operated and maintained – i.e., proposals without a strong management plan;
• Proposals that do not demonstrate shared-use within the institution, and/or among institutions;
• Proposals that request instrumentation that is otherwise reasonably accessible;
• Proposals that do not adequately match the budget to the scope of the project;
• Proposals that do not describe research training, particularly for groups underrepresented in science & engineering or persons with disabilities.

These proposals will be *not review well!*

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MRI Proposals

So what makes an MRI proposal competitive?

Note the term "competitive", rather than "successful"!

Due (in part) to budget limitations, 20-25% of submitted proposals are funded

Good proposals may not get funded

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MRI Proposals

So what makes an MRI proposal competitive?

An obvious first step is to avoid the pitfalls already mentioned!

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MRI Proposals

So what makes an MRI proposal competitive?

Build your case on its merits

What is the intellectual merit of the proposed activity?
What are the broader impacts of the proposed activity?

- Describe (enthusiastically) compelling research / research training activities to be undertaken with the instrument. *Buy/Build it and they will come is not a good reason…*

- Demonstrate how your activities will make meaningful contributions within and across disciplines in both research and research training. *We are the ones best able/positioned to do this work!*

  - Establishing a *need* is usually not enough. *What makes you unique?*

- Match your proposed effort to the mission of your institution and describe it in that context. *MRI awards build institutional capacity…*

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MRI Proposals
Some Additional Thoughts…

• Demonstrate appropriate leadership and commitment to bring the project to completion. *Being a good research scientist is one thing, being a good manager is quite another…*

• How would the project enable the integration of research and education? *MRI is a Research and Research Training program.*

• How would the project enable integrating diversity into NSF programs, projects, and activities? *Saying it will is not enough!*

• Ask for what you need, no more no less. *Bells and whistles are nice, but..*

• Avoiding pitfalls (*i.e.,*"Don't Do This") will not guarantee a competitive proposal. *So your proposal is technically flawless but is it compelling?*

The "opposite" of "Don't Do This" is a vast range of possible approaches, strategies, and designs for your proposal.
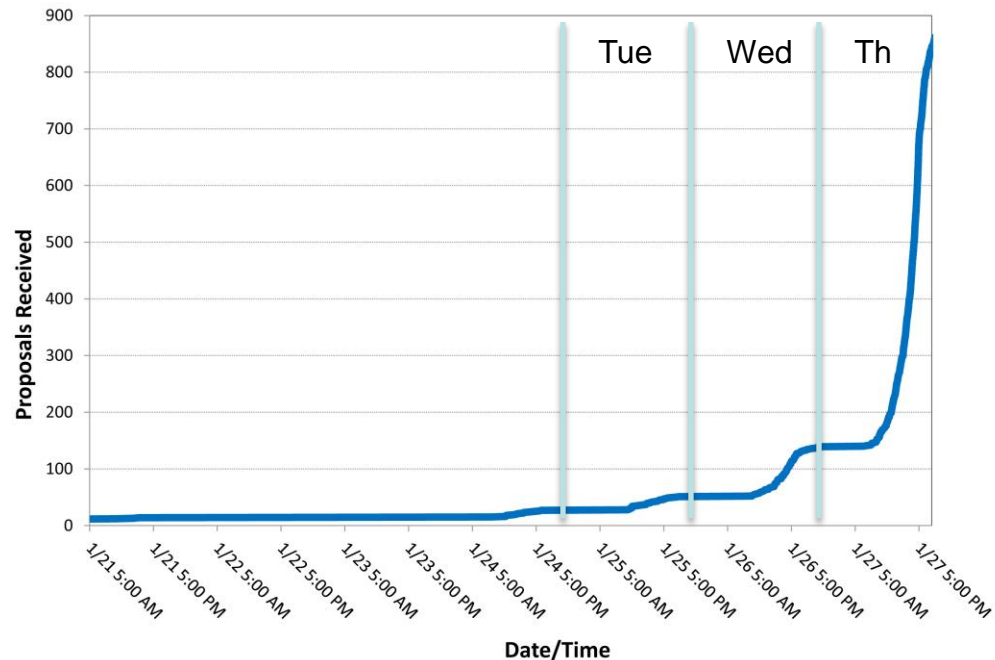
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Important Takeaway

Submit early and check that what was received at NSF is what you intended to submit!

You can always revise and resubmit proposals prior to the deadline, but not afterwards!

FY2011 MRI Proposal Deadline: 01/27/2011, 5 PM Local Time

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MRI Proposals
Some Additional Thoughts…

Think like a reviewer

- *What "story" would you want to hear?*
- *If you wonder if reviewers will have a concern, almost certainly they will!*
- *MRI, like other grants programs, is a competition – what makes your proposal stand out?*

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Thank You!

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